

## REPORT

CD NO.

DATE OF  
INFORMATION 1951 - 1952

DATE DIST. 10 Jul 1952

NO. OF PAGES 5

SUPPLEMENT TO  
REPORT NO.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANINGS OF ESPIONAGE ACT 50 U. S. C. 31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

## RECENT MEDICAL DEVELOPMENTS IN CHINA

Some of these medical developments are reported below. They include the successful use of blood plasma or whole blood in curing encephalitis; the discovery of an inexpensive method of manufacturing bacteria culture media; the successful manufacture of Hetrazan, an effective drug for the treatment of schistosomiasis; and the manufacture of hemostatic sponges to stop bleeding during surgical operations.

Hankow, 1 January -- Recently, the public health department of the Central-South China Military and Administrative Committee received a directive from the Ministry of Public Health urging the use of domestically manufactured medicine.

The directive pointed out that, at present, the China Pharmaceutical Company is paying special attention to the manufacture of domestic medicine and is urging all health organs to use the domestically manufactured medicine in view of the current import restrictions.

CURES ENCEPHALITIS PATIENTS WITH BLOOD PLASMA -- Sian Ch'un-chung Jih-pao,  
7 Sep 51

According to the Peiping Jen-min Jih-pao, the Central People's Hospital has ~~succeeded~~ in curing epidemic encephalitis patients by means of intravenous injection of adult blood plasma or whole blood. This treatment has greatly reduced the mortality rate of encephalitis patients.

- 1 -

[illegible]

RESTRICTED

STAT

In the Northeast and North China administrative regions, the mortality rate of encephalitis patients was more than 30 percent in 1950. The new treatment tested this year [1951] at the Central People's Hospital showed that a majority of deaths from encephalitis can be prevented. Forty-four patients underwent 40 day experiment; 27 patients did not receive the plasma injection, while the other 17 did. Of the former group, 15 persons died from the disease, while only one death was reported from the latter group.

INEXPENSIVE WAY FOR PRODUCING BACTERIA CULTURE MEDIA -- Shanghai, Chieh-fang Jih-pao, 25 Dec 51

Su Te-lung, chief of the public health department of the Shanghai Medical College, has achieved noticeable results in the manufacture of bacteria culture media. Not only is this culture medium superior to that of existing ones, but its manufacturing cost is also one tenth of the present costs. Bacteria culture media are essential for bacteriological laboratories and for vaccine factories manufacturing bacteria; it is the nutrient base for the growth of bacteria.

Professor Su Te-lung's research work commenced shortly after the liberation of Shanghai. The blockade of our coast by the enemy halted our importation of pure albumen and essence of beef needed in the manufacturing of bacteria culture media. To boycott the blockade and to reduce manufacturing costs, Professor Su immediately began to search for a substitute for pure albumen and to experiment with the possibility of using less beef. In his manufacturing process, he was confronted with many difficulties. There were many times when the bacteria would not grow or did not grow well, which discouraged him, but the many patriotic deeds of others inspired and strengthened his confidence. For instance, he said, "If my work succeeds, it was because of the impulse of the patriotic surge felt by the people throughout the nation."

Up to the present, he has been manufacturing two types of bacteria culture media: The first type, A, uses less beef, the proportion of beef being one fifth of the amount ordinarily used; the cost of production of A is 3,000 yuan per liter. The second type, B, which uses no beef, costs 1,000 yuan per liter.

Pure albumen for producing bacteria culture media, however, costs 26,000 yuan per liter. American-made bacteria culture media cost 40,000 yuan per liter. In the first place, then, by using Professor Su Te-lung's bacteria culture media we can save a great deal of money for the nation. For instance, if all the bacteriological laboratories use nutrient base to grow 50 liters of bacteria, each liter would require 50 catties of beef; and if each catty of beef costs 8,000 yuan, the cost would be 400,000 yuan. In addition, one pound of pure albumen costs 800,000 yuan, which makes the total cost 1.2 million yuan.

If Professor Su's manufacturing method is used, his Type A would require only 10 catties of beef costing 80,000 yuan, and no albumen. The cost for other materials, such as pig blood, pig caul, bean sprouts, is about 120,000 yuan, making the total cost 200,000 yuan, and thereby reducing the cost by one million yuan.

Type B, which uses no beef as the nutrient base, requires raw materials which cost only 120,000 yuan, and therefore saves 1.08 million yuan. On the basis of lowest estimates, if there are 100 bacteriological laboratories using Type A bacteria culture medium, 100 million yuan can be saved each month, with a 1.2-billion-yuan saving each year. If this kind of bacteria culture medium could be used in the antiepidemic vaccine factories, we could save a great deal of the nation's wealth. Research on this work is still continuing.

- 2 -

RESTRICTED

RESTRICTED

STAT

As for conditions governing the growth of bacteria, according to the measurements of electrical instruments, the growth density of staphylococci is 204 degrees; American-made culture media increase the growth of the same bacteria by only 53 degrees. The growth of typhoid bacilli in the newly manufactured culture medium is 108 degrees, whereas the growth of the same bacteria in American culture medium is barely 22 degrees. From this it follows that the bacteria culture medium in the average experimental laboratories in China exceeds in the American-made culture medium effectiveness as a bacteria nutrient.

The special advantages in making this type of bacteria culture media are:  
 (1) The important materials used are pig blood, pig caul, and bean sprouts; these are native products that can be bought anywhere in China. Pure albumen is not required for its manufacture. (The market price on American-made albumen is 800,000 yuan per pound.) Not only is it convenient for the country to use this type, but, at the same time, it saves the nation a great deal of money.  
 (2) The manufacturing process is simple -- any bacteriological laboratory or antiepidemic organization can copy the process.

MANUFACTURE SCHISTOSOMIASIS MEDICINE -- Hong Kong, Ta Kung Pao, 6 Feb 52

Shanghai -- The pharmaceutical department of the PLA Medical Institute announced the successful manufacturing of Hetrazan, an effective drug in the treatment of schistosomiasis.

In 1947 an American, Hewitt [spelled in English in the text], discovered Hetrazan, which could be used to exterminate the schistosomiasis-carrying fluke. Since 1949, clinical tests have proven it to be an excellent and effective drug for treatment of the disease. In the past, we have always depended on foreign imports of this drug; consequently, we have not experimented with manufacturing it. Moreover, since the price of this drug is so high, a great majority of those afflicted with schistosomiasis cannot afford to buy it.

Schistosomiasis is seriously prevalent in the East China region, especially in the coastal districts, the Yangtze River basin, and in the lake, swamp, and marshy areas, where a large number of inhabitants and soldiers are infected with the disease.

When the workers of the pharmaceutical department undertook the research project of manufacturing of Hetrazan, they did so in high spirits. There were many difficulties because of the meager information on the manufacture of this drug.

The steps of manufacturing were also very complex, requiring ten or more steps, and the most difficult problem was the question of raw materials. More than ten types of materials are required; over half of them cannot be obtained or produced domestically. After much hardship, the workers succeeded in uncovering the manufacturing method and solved the question of material shortages.

The original estimate was that it would take at least a year to complete the research, but because of the diligent work, it was finished in 2 months. The most commendable achievement was that the manufacturing cost is barely 60 percent of the price paid for the US products. Moreover, domestic materials were used, except for one type, which was obtained from the USSR.

The domestically manufactured drug was named I-ch'un-sheng (益群生 literally, beneficial to people's life). However, the workers were not yet satisfied; they continued to respond to the call of the production-increase and economy campaign and, at present, they are carrying on research to improve and increase the purity of the product at each stage of manufacturing and to produce

- 3 -

RESTRICTED

STAT

RESTRICTED

STAT

the drug in large amounts. Huang Ming-chu, head of the pharmaceutical department, said: "Regarding this, I believe that, based on our active collective spirit of creativeness, we have the assurance of success."

MAKE HEMOSTATIC SPONGES -- Hong Kong, Ta Kung Pao, 6 Feb 52

Shanghai -- The laboratory of the surgery department of the Shanghai Medical College and surgeons from the surgery department of Chung-shan Hospital have succeeded in manufacturing an amyllum sponge. Surgeons who participated in the experiment included Shen K'o-fei, president of Chung-shan Hospital, Shih Yu-ch'uan, Ch'en Fa-tung, and Shih Mei-hsin. The amyllum sponge is used in surgical operations to stop bleeding (hemostasis). It constitutes a brilliant record in the development of surgery in China.

The progress of surgery and the improvement in hemostatics is of great importance. Even though silver clamps, electric cautery, etc., can be used in most surgical operations, there are many delicate operations involving bleeding such as operations on the brain, liver, kidneys, and other parts of the body, in which the common hemostatic methods cannot be used. In the past, we were dependent on outside nations for this type of hemostatic medical compounds.

Recognizing the importance of hemostatics in surgery, the Chung-shan Hospital went ahead with experimentation and manufacturing. For the purpose of selecting a compound for which raw materials are easily available, whose preparation is easy, and the price of the product accessible to many, the hospital surgeons collaborated in the collection and research of documents and in analyzing many possible types of raw materials. Difficulties in the process of controlling, synthesizing, and selecting of materials and of manufacturing eventually were overcome and results were finally achieved.

The color of the finished amyllum sponge is white and it becomes hard after drying. It turns slightly yellow after it is sterilized. An amyllum sponge can absorb fluid equal to 16 times the area of the sponge, and thus proves its great value in surgical operations.

The first practical step in the manufacture of amyllum sponges is to take water-chestnut flour (*trapa bicornis*) and add the proper amount of distilled water until the density of the mixture is 15 percent. (Millet flour, corn flour, or amyllum can be used as a substitute for water-chestnut flour.) The mixture is then heated and stirred until it becomes a pastelike substance. If the mixture becomes too thick or lumpy, water is added to thin it out. After the amyllum paste has been formed, it is allowed to cool before it is placed in a refrigerator set at -24 degrees centigrade.

After the paste has jelled, it is removed from the refrigerator and defrosted in an enamel pan lined with cheesecloth. The water is then gently squeezed out from this spongelike substance. The next process is to cut it up into desirable sizes, and soak them in a 75-percent solution of ethyl alcohol, or pressure sterilize them for ready use. To preserve the amyllum sponge for a period of more than 2 months, it can be dried in the sun, placed in lime, or placed in a 56 degree centigrade container. When completely dry, it can again be soaked in alcohol or steam sterilized.

Before the amyllum sponge can be used, it must be dipped into a salt disinfectant solution. When ready for application, it should be placed on a piece of cheesecloth and the excess fluid squeezed out before it is applied to the bleeding area.

- 4 -

RESTRICTED

RESTRICTED

STAT

According to the preliminary experience of the Chung-shan Hospital in using amylum sponges for clinical cases and for experimental biological operations, it has been sufficiently proven that they are an excellent hemostatic for surgery. Therefore, even though other surgical hemostatics cannot be deprecated, we should continue the development of amylum sponges with renewed vigor. Moreover, amylum sponges deserve to be introduced in all hospitals and medical organizations.

- E N D -

- 5 -

RESTRICTED